BELYAYEV, Yu. I.; IVANTSOV, L. M.; KOSTIN, B. I.; SHEMET, V. V.

"O povyshenich chuvstvitel'nosti pryamykh fotoelektricheskikh metodov emissionnogo spektral'nogo analiza."

report submitted for 2nd Intl Symp on Hyperpure Materials in Science and Technology, Dresden, GDR, 28 Sep-2 Oct 65.

Institut geokhimii i analiticheskoy khimii im Vernadskiy Akademii nauk SSSR, Moscow.

BELYAYEV, Yu.I.; KHITROV, L.M.

Use of quantometers in oceanographic research. Trudy Inst. okean. 75:147-156 '65. (MIRA 17:11)

UDAL'TSOVA, N.I.; SAVVIN, S.B.; NEMODRUK, A.A.; NOVIKOV, Yu.P.; DOBROLYUBSKAYA, T.S.; SINYAKOVA, S.I.; BILIMOVICH, G.N.; SERDYUKOVA, A.S.; BELYAYEV, Yu.I.; YAKOVLEV, Yu.V.; NEMODRUK, A.A.; CHMUTOVA, M.K.; GUSEV, N.I.; PALEY, P.N.; VINOGRADOV, A.P., akademik, glav. red.; ALIMARIN, I.P., red.; BABKO, A.K., red.; BUSEV, A.I., red.; VAYNSHTEYN, E.Ye., red.; YERMAKOV, A.N., red.; KUZNETSOV, V.I., red.; RYABCHIKOV, D.I., red. toma; TANANAYEV, I.V., red.; CHERNIKHOV, Yu.A., red.; SENYAVIN, M.M., red. toma; VOLYNETS, M.P., red.; NOVICHKOVA, N.D., tekhn. red.; GUS'KOVA, O.M., tekhn. red.

[Analytical chemistry of uranium] Analiticheskaia khimiia urana. Moskva, Izd-vo Akad.nauk SSSR, 1962. 430 p. (MIRA 15:7)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii.

(Uranium--Analysis)

BOROVIK-ROMANOVA, T.F.; BELYAYEV, Yu.I.; KUTSENKO, Yu.I.; PAVLENKO, L.I.; SAVINOVA, Ye.N.; FARAFONOV, M.M.; VAYNSHTEYN, E.Ye., prof., doktor khim. nauk, otv. red.; DRAGUNOV, E.S., red. izd-va; ASTAF'YEVA, G.A., tekhn. red.

[Spectral determination of rare and dispersed elements in minerals rocks, soils, plants, and natural waters] Spektral'noe opredelenie redkikh i rasseiannykh elementov; v mineralakh i porodakh, pochvakh, rasteniiakh i prirodnykh vodakh. [By] T.F. Borovik-Romanova i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 239 p. (MIRA 15:3)

1. Akademiya nauk SSSR. Institut geokhimii.
(Spectrum analysis)

Diffusion of beryllium in germanium

mobilities. As Be is doubly ionized at room temperature, $c = p/2 - nu_-/2u_+$. From the curve it is possible, with satisfactory accuracy, to determine the relation $D = 0.5 \exp(-2.5/kT)$ for D. The maximum solubility depends only slightly on temperature. The error in D-determination was 20%, and in the c_0-determination, 50%. The authors thank I. A. Radziyevskiy for placing the Ge single crystals at their disposal. There are 1 figure and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Kiyevskiy ordena Lenina gosudarstvennyy universitet im. T. G. Shevchenko (Kiyev "Order of Lenin" State University imeni T. G. Shevchenko)

SUBMITTED: July 20, 1960

Card 3/3

Diffusion of beryllium in germanium

described by the relation $c(x,t) = c_0(1 - \mathrm{erf}\frac{x}{2\sqrt{Dt}})$, where c_0 is the limiting concentration of Be, and D is the diffusion coefficient. By this diffusion of Be (which is an acceptor impurity in Ge) a p-n junction was formed at a certain depth; the depth of its position could be determined as 15-70μ (error $\pm 2\mu$). At each temperature, several specimens with different antimony concentration were investigated, and thus the donor concentration and also the p-n junction for each sample differed. By removing layers, by several measurements of the carrier concentration, and by determination of the position of the p-n junction, several points on the curve $c = f(x)$ could be determined at one and the same temperature. Thus, the depth distribution of the carrier density could be determined. In the diagram shown here, curve 1 shows the temperature dependence of the diffusion coefficient of Be in Ge, curve 2 shows the diffusion coefficients of Zn in Ge, and curve 3 shows the temperature dependence of the limiting concentration c_0 (right ordinate) on Be in Ge. c_0 was determined from the solubility of Be in Ge at a given temperature. At the point where the thermal probe determined the p-n junction, $p = n(u_-/u_+)$ was found, where n and p are the electron and hole concentration, respectively, and u_-, u_+ the

89285
S/181/61/003/001/024/042
B006/B056

24,7500 (1136, 1143, 1160)

AUTHORS: Belyayev, Yu. I. and Zhidkov, V. A.

TITLE: Diffusion of beryllium in germanium

PERIODICAL: Fizika tverdogo tela, v. 3, no. 1, 1961, 182-184

TEXT: Following a previous paper (Ref. 1), in which the authors studied the electrical and recombination properties of Be-doped germanium, they now report on investigations of diffusion and on the determination of the diffusion coefficient as well as the solubility of Be in Ge. As initial substance, antimony-doped germanium single crystals having a resistivity of 1-8 ohm·cm were used. The 2 × 3 × 10 mm specimens were etched in boiling Perhydrol, after which a 10μ thick Be layer was sputtered in vacuo onto their end surfaces. For the purpose of rendering diffusion easier, the specimens were heated at 920-720°C in evacuated quartz tubes (10^{-3} mm Hg) for 24-150 hr. As the Be layer was visible also after this process, a continuous subsequent supply of Be atoms into the interior of the Ge crystals could be assumed. The distribution of these Be atoms may therefore be

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VAYNSHTEYN, E.Ye.; BELYAYEV, Yu.I.

Use of radioactive isotopes in the study of the distribution of atoms in the plasma of a d. c. arc in various atmospheres. Dokl. AN SSSR 134 no.2:322-325 S '60. (MIRA 13:9)

1. Institut geokhimii i analiticheskoy khimii im. V.I.Vernadskogo Akademii nauk SSSR. Predstavleno akad. A.P.Vinogradovym.
(Plasma (Ionized gases)) (Electric arc) (Isotopes)

BELYAYEV, Yu.I.

Quantitative determination of small amounts of rare earth impurities by spectral analysis without the use of a reference standard. Dokl.AN SSSR 133 no.1:95-97 Jl '60. (MIRA 13:7)

1. Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo Akademii nauk SSSR. Predstavleno akademikom A.P.Vinogradovym.
(Rare earths--Analysis)

85637

Use of a "Sounding" Arc for the Control of the Process of Feeding the Substance Into a d.c. Arc Plasma

S/075/60/015/005/009/026/XX
B002/B056

of Fe, Ni, Si, Cr, Al, and Na from mixed oxide of uranium was studied in the presence of Ga_2O_3 and NaCl (Figs. 2 and 3). Systematic experiments were carried out with KCl, NaCl, Al-metal, Al_2O_3, $CaCl_2$, $FeCl_3$, SiO_2, $ZnCl_2$, Na, Th, and Be showed that the duration of "sounding" and of the pauses depends , among other things, on the following factors: Concentration on the electrode, volatility and ionization potential of the elements, temperature (Figs. 4-7, Table). Moreover, the influence exerted by gamma rays (Na^{24}) upon the operation of the "sounding" arc was determined (Fig.8). The authors thank V. A. Kosterin for assisting in the experiments. A paper by A. K. Rusanov is mentioned. There are 8 figures, 1 table, and 4 Soviet references.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the Academy of Sciences USSR, Moscow)

SUBMITTED: November 23, 1959

Card 2/2

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S/075/60/015/005/009/026/XX
B002/B056

24.3400

AUTHORS: Vaynshteyn, E. Ye., Belyayev, Yu. I., and Parafonov, M. M.

TITLE: Use of a "Sounding" Arc for the Control of the Process of Feeding the Substance Into a d.c. Arc Plasma

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol. 15, No. 5, pp. 550 - 555

TEXT: The reproducibility of spectroanalytical determinations is also impaired in the case of electrical conditions which are carefully kept constant by the fact that fluctuations occur in the evaporation of the sample. The authors endeavored to control these fluctuations acoustically: Parallel to the d.c. arc an oscillatory circuit with C 8 - 18 μF and L 0.1 - 0.25 mH was connected in series herewith; the frequency could be controlled between 50 and 20,000 cps. In order to enlarge the amplitude, a capacitor with 5 - 16 μF was further connected parallel to the arc. (Fig.1). The acoustic vibrations were recorded by means of a tape recorder for purposes of control. A cathode ray oscillograph was used to measure the intensity. By means of this method, the evaporation

Card 1/2

*BELYAYEV, Yu.I.

PHASE I BOOK EXPLOITATION SOV/4443

Akademiya nauk SSSR. Komissiya po analiticheskoy khimii

Metody opredeleniya primesey v chistykh metallakh (Methods of Determining Admixtures In Pure Metals) Moscow, 1960. 411 p. (Series: Its: Trudy, 12) 3,500 copies printed.

Resp. Eds.: A.P. Vinogradov, Academician, and D.I. Ryabchikov, Doctor of Chemical Sciences; Ed. of Publishing House: M.P. Volynets; Tech. Ed.: T.V. Polyakova.

PURPOSE: This collection of articles is intended for chemists, metallurgists, and engineers.

COVERAGE: The articles describe methods for detecting and determining various admixtures and their traces in pure metals. Also discussed are many chemical, physicochemical, electrochemical, spectrochemical and luminescence methods of analyzing materials of high purity. The editors state that these methods have been developed within the last five or six years by various Soviet scientific institutes, and are now widely used in research and factory laboratories of the Soviet Union. No personalities are mentioned. References, mostly Soviet, accompany each article.

Comparative Investigation of the Spatial Distribution of Elements in a Direct Current— and a Pulsed Current Arc by Means of Radioactive Isotopes

and the spatial distribution of the elements has been examined by means of various silver combinations, sodium chloride and copper chloride. The resulting curves depend upon the sort of the respective combinations. This points to the fact that the state of the atoms of the examined elements is not equivalent within the plasma if the elements are evaporated in the form of various combinations. The curves of distribution obtained are given by several illustrations. For his aid in conducting these examinations the authors express their gratitude to N. P. Yakovlev. There are 8 figures and 7 references, 6 of which are Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva
(Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the AS USSR, Moscow)

SUBMITTED: May 22, 1958

Comparative Investigation of the Spatial Distribution of Elements in a Direct Current— and a Pulsed Current Arc by Means of Radioactive Isotopes

the specimen with a buffer mixture. (carbon powder and copper oxide). The spatial distribution of copper at its evaporation as a metal in a spark discharge has been examined in a d.c. arc and an impulse arc to discover the mechanism of the entry of the atoms into the space between the electrodes. The γ-radiation of ^{64}Cu, which has been evaluated photographically, was used for the investigation. The following was found in this connection: Unlike to what is the case in the spark discharge and the d.c. arc in the plasma of which the distribution of the substance separated from the anode is rather unequal, the distribution is equal within the center of the space between the electrodes of an impulse arc. Moreover, within the plasma of an impulse arc a characteristic "protuberance" appears, marked by higher density and which is in immediate connection with the substance contained within the crater of the anode. By this phenomenon it may be concluded that, besides by normal interspaced distillation, the entry of the elements into the space between the electrodes can also result by periodical "injections" of the melted substance to be analyzed. The kinetics of evaporation

5(4), 5(2) SOV/75-14-2-1/27

AUTHORS: Belyayev, Yu. I., Vaynshteyn, E. Ye., Korolev, V. V.

TITLE: Comparative Investigation of the Spatial Distribution of Elements in a Direct Current— and a Pulsed Current Arc by Means of Radioactive Isotopes (Sravnitel'noye issledovaniye prostranstvennogo raspredeleniya elementov v duge postoyannogo toka i impul'snoy duge pri pomoshchi radioaktivnykh izotopov)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 2, pp 147-151 (USSR)

ABSTRACT: The authors carried out their examinations by means of a method that has been described before (Refs 3-5). It was demonstrated that independently of the character of distribution of the elements within the plasma of a d.c. arc, uniform distribution with distinctly marked maximum occurs for all elements with the exception of the alkali metals in an impulse arc. This maximum is located within the center of the space between the electrodes. The exceptional position of the alkali metals is explainable by their lower ionization potentials. With these elements equal distribution in the space between the electrodes may be obtained by dilution of

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On the Use of a "Sound Arc" for Increasing the Reproducibility of Quantitative Determinations by Spectral Analysis

SOV/75-14-1-27/32

is Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the AS USSR, Moscow)

SUBMITTED: June 6, 1958

Card 3/3

the effect produced by this arc is based is the following: The plasma of the arc is known to have no constant resistance, and therefore the direction of the current at the electrodes varies continuously. If an oscillation field is applied to the arc (see figure), the natural oscillations of which amount to a period of $T = 2\pi\sqrt{LC}$, the oscillations of the plasma are amplified with this period and, in turn, cause an amplification of the intensity of field oscillations. In this connection a certain stabilization of the arc discharge may be expected to occur on the frequency $\omega = 1/T$ which entails an increase of the stability of operative conditions of the energy source. Outwardly, this manifests itself by the fact that the arc begins to emit sounds as soon as ω is between 50 and 20000 cycles. This possibility of increasing the stability of operative conditions by building-in the direct current arc into the scheme of a sound arc was experimentally tested and found to be efficient. A comparison of the errors (occurring with and without use of the sound arc respectively) is shown by figures. There are 2 figures and 3 references, 1 of which

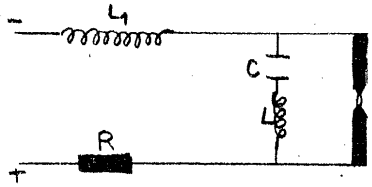
5(2), 5(4)

AUTHORS: Belyayev, Yu. I., Vaynshteyn, E. Ye. SOV/74-14-1-27/32

TITLE: On the Use of a "Sound Arc" for Increasing the Reproducibility of Quantitative Determinations by Spectral Analysis (Ob ispol'zovanii "zvuchashchey" dugi dlya povysheniya vosproizvodimosti kolichestvennykh opredeleniy spektral'nym metodom)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 1, pp 133-134 (USSR)

ABSTRACT:



Basic scheme of a Sound Arc

In order to increase the reproducibility and exactitude of quantitative determination by spectral analysis a direct-current pulse arc (Ref 1) is used. Another possibility is offered by the use of the so-called sound arc, which is used also in radio engineering (Ref 2). The principle upon which

BELYAYEV, Yu. I., VAYNSHTEYN, E. Ye., and PAVLENKO, L. Ye.

"The Application of Radioactive Isotppes in Spectral Analysis ."

report presented at the UNESCO Conf. on Utilization of Radioactive Isotopes in scientific Research, Paris, 9-20 Sept 1957,
Vest. AN SSSR, 28, No. 1, 1958, p. 71-78, (author Vihogradov, A. P.)

Application of Radioactive Isotopes in the Investigation of the Spatial Distribution of Elements in Direct-Current-Arc Plasma During Spectrochemical Determination of Impurities in Uranium

currence of the so-called "3rd components" in the sample. This factor, however, is not satisfactorily investigated as yet.

For the investigation of the spatial distribution of the elements radioactive isotopes were used, the β-radiation of which was measured photographically. Pitchblende with its different impurities was investigated.

There are 9 figures and 4 references, 2 of which are Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni Vernadskiy of the AS USSR, Moscow)

SUBMITTED: February 26, 1958

1. Radioisotopes--Applications 2. Electron gas--Structural analysis
3. Uranium--Chemical impurities 4. Spectrographic analysis --Applications

Application of Radioactive Isotopes in the Investigation of the Spatial Distribution of Elements in Direct-Current-Arc Plasma During Spectrochemical Determination of Impurities in Uranium

elements in the presence of such carriers is not connected with a modification of the speed by which these elements enter the plasma. The carrier only influences the distribution of the admixed elements between the electrodes and leads to their concentration in the central part of the plasma. This lowers the degree of dispersion of the atoms. Therefore the influence of the carrier on the intensity of the spectral lines has no selective character. If in the sample large quantities of elements are found the atoms of which are more asymmetrically distributed in the plasma of the arc than the atoms of the carrier, the influence of the carrier can be highly reduced or entirely suspended.

4) The differences in the spatial distribution of the elements between the electrodes of the arc and the influence exerted on them by the composition of the sample are some of the factors determining the dependence of the results of the spectral analysis on the entire composition of the sample and the oc-

Application of Radioactive Isotopes in the Investigation of the Spatial Distribution of Elements in Direct-Current-Arc Plasma During Spectrochemical Determination of Impurities in Uranium

to be analyzed large quantities of another element (a macrocomponent) is present, the atoms of which exhibit a distribution in the space between the electrodes differing from that of the atoms of the constituent to be determined, the distribution of all remaining elements beginning from a certain content is determined by the distribution of the macrocomponent. In presence of 2 macrocomponents, the atoms of which have a different distribution, the elements of the impurities follow the atoms of that macrocomponent, of which there is a greater quantity. If the quantities of the macrocomponents are approximately equal, the impurities of both components are influenced to the same extent.

3) The elements of the compounds which are usually used as carriers in spectral analysis are characterized by their distribution between the electrodes in the form of a symmetrical arc which shows a distinct peak in the center. The character of the distribution is independent of the method by which the carrier substance was brought into the space between the electrodes. The increased intensity of the lines of the impurity

SOV/75-13-4-2/29

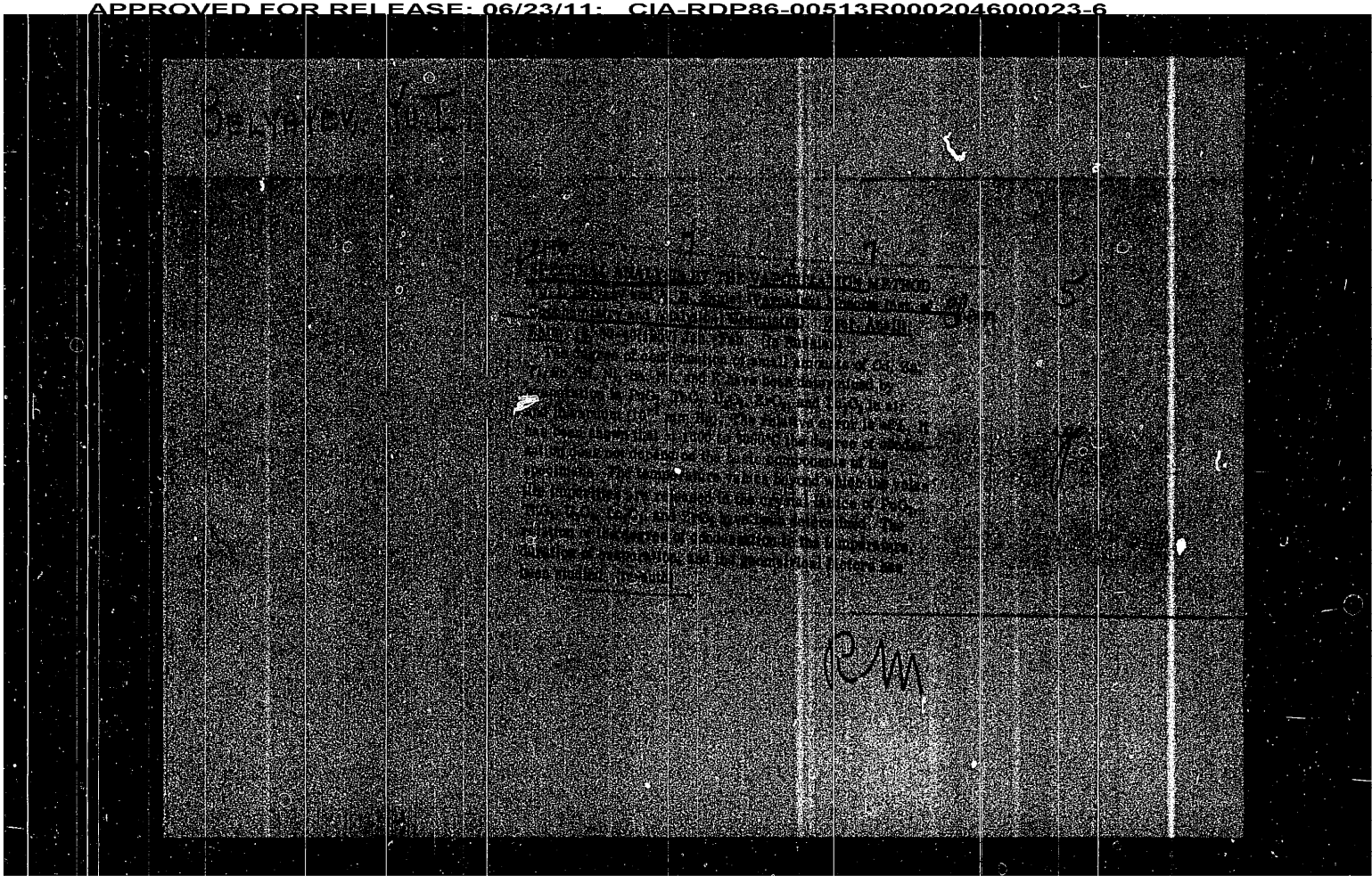
AUTHORS: Vaynshteyn, E. Ye., Belyayev, Yu. I.

TITLE: Application of Radioactive Isotopes in the Investigation of the Spatial Distribution of Elements in Direct-Current-Arc Plasma During Spectrochemical Determination of Impurities in Uranium (Primeneniye radioaktivnykh izotopov dlya issledovaniya prostranstvennogo raspredeleniya elementov v plazme dugi postoyannogo toka pri spektral'nom opredelenii primesey v urane)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol. 13, Nr 4, pp. 388-395 (USSR)

ABSTRACT: Based on the present paper the following was found:
1) The spatial distribution of the atoms of different elements in a direct-current-arc plasma is inhomogeneous and mainly depends on the volatility of the element or its compound at the temperature occurring under the conditions of analysis. The ions of elements with a low ionization potential are concentrated in the space about the cathode. The spatial distribution of an element is practically independent of its content in the sample.
2) If in a medium of low volatility apart from the constituent

Card 1/4



BELYAYEV, Yu. I., PAVLENKO, L. I. and VAYNSHTEYN, E. E.

"The use of radio-active isotopes in spectral analysis," a paper submitted at the International Conference on Radioisotopes in Scientific Research, Paris, 9-20 Sep 57.

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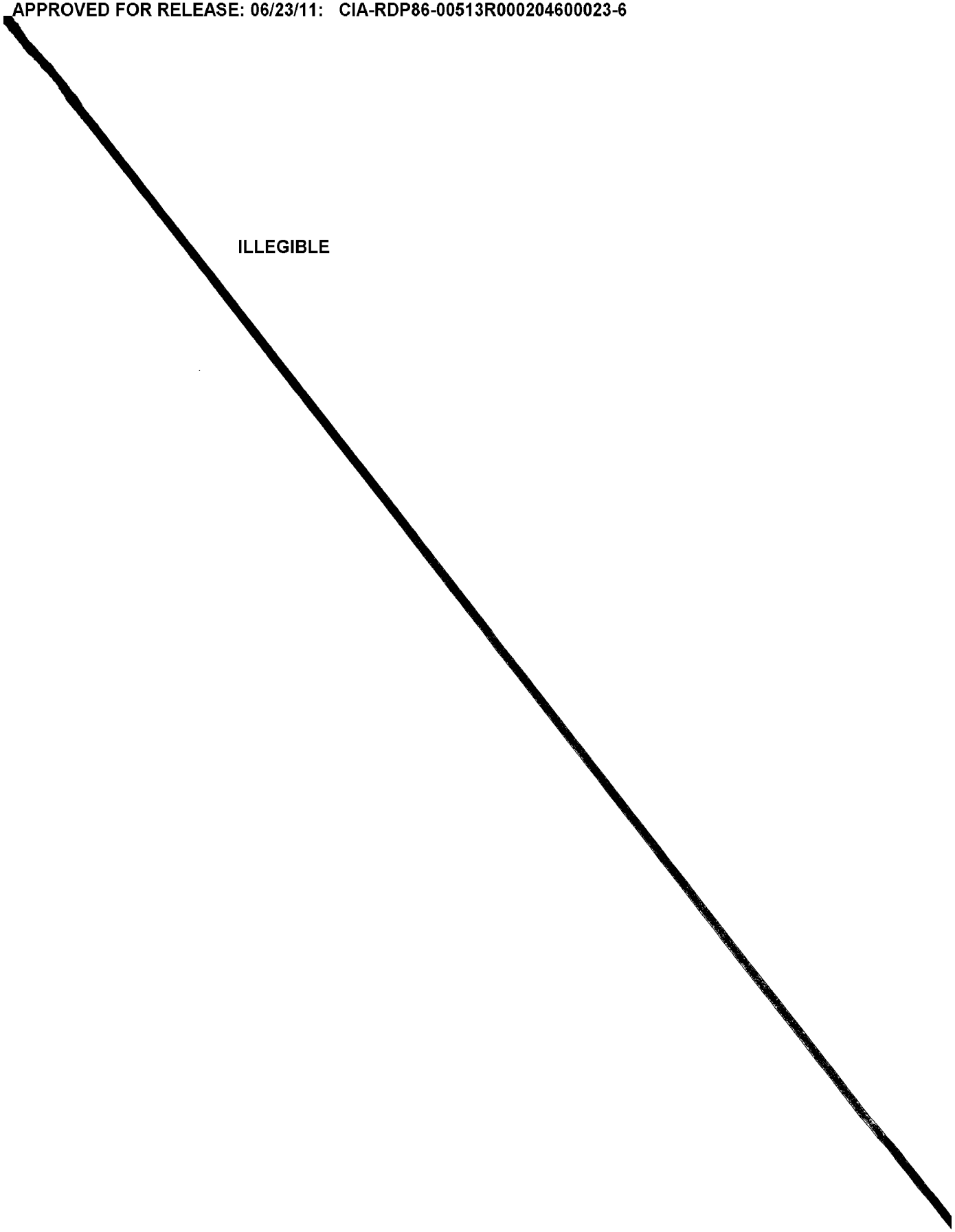
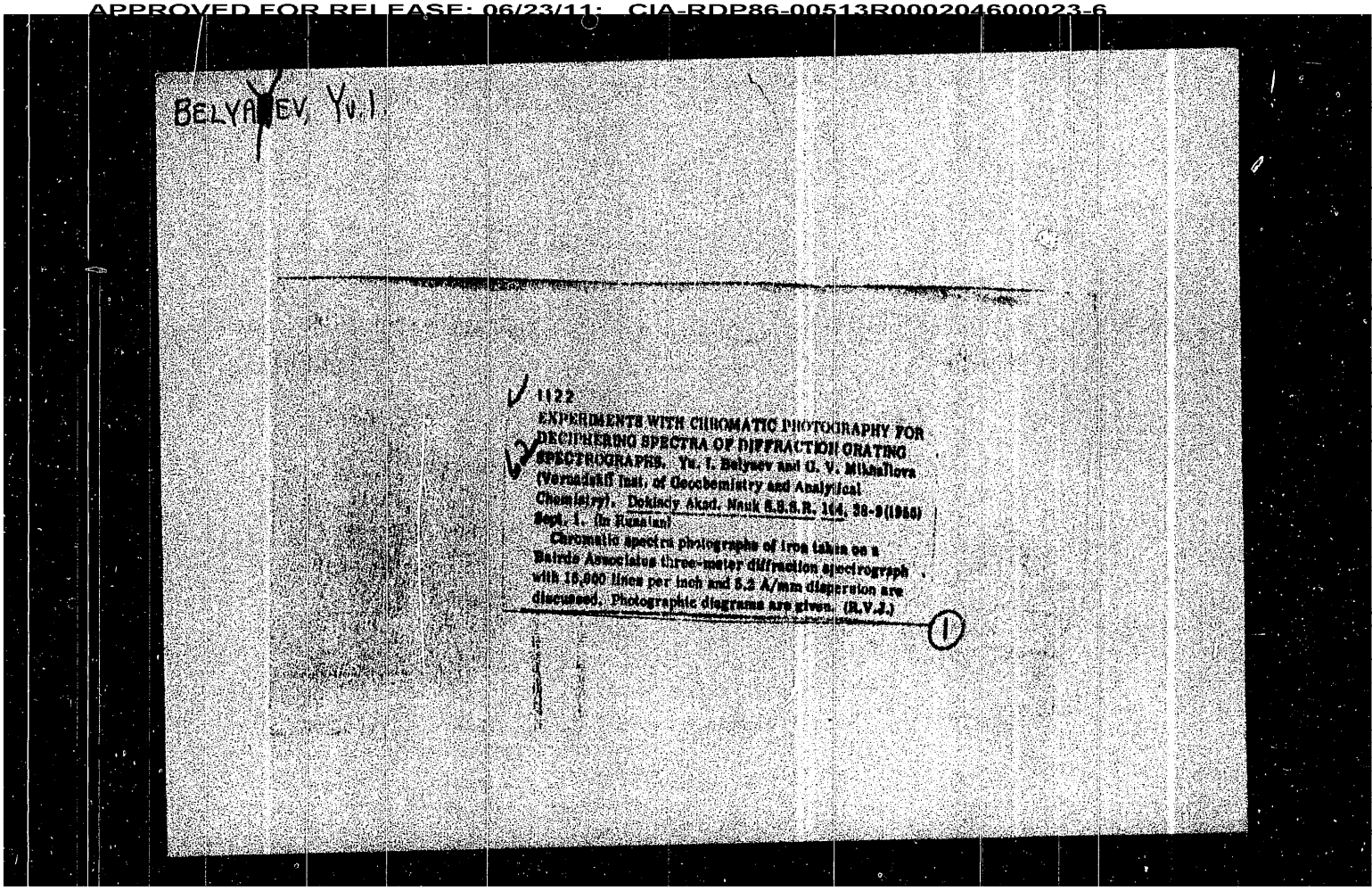




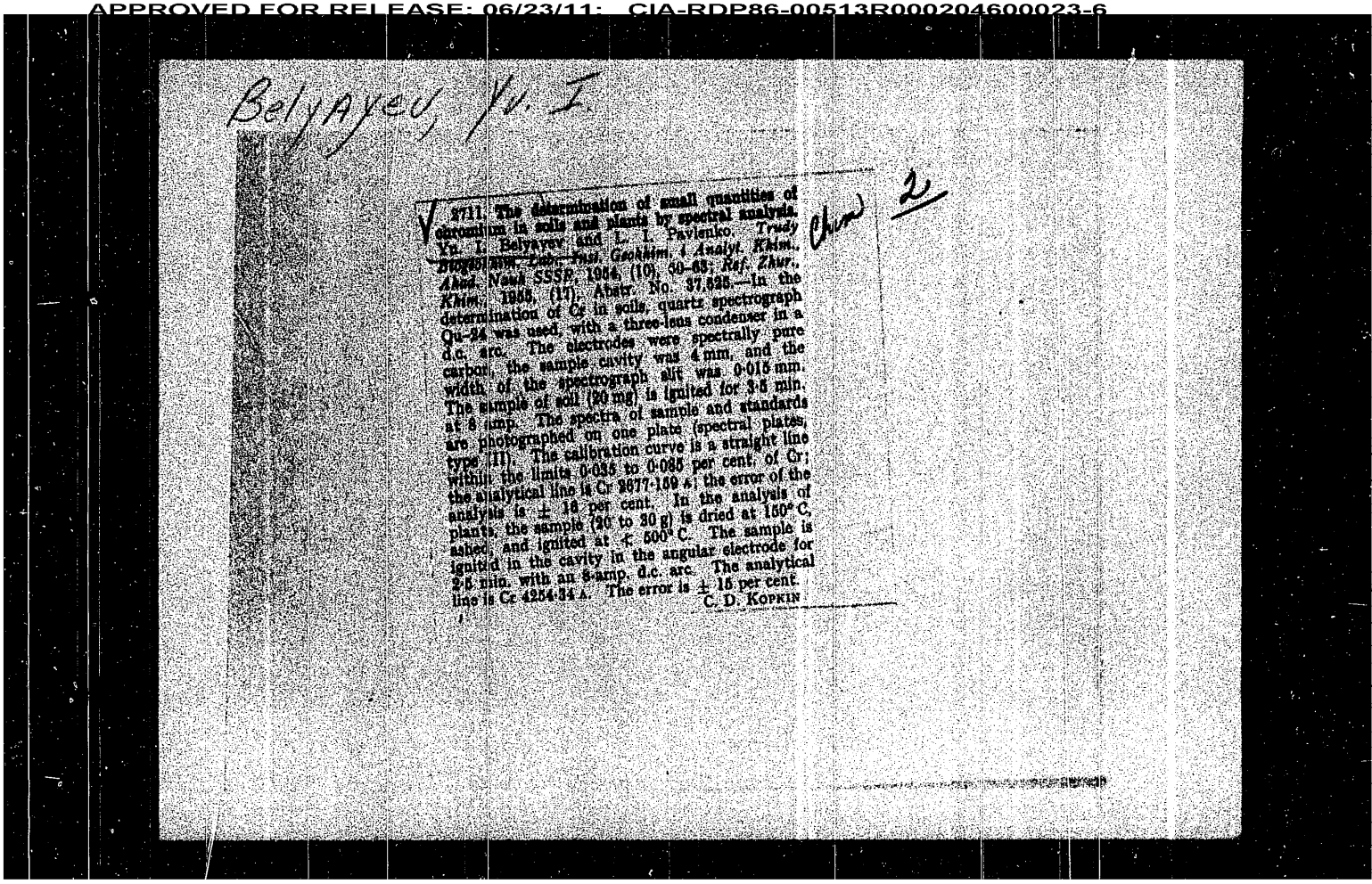
BELYAEV, Yu. I.

1122

EXPERIMENTS WITH CHROMATIC PHOTOGRAPHY FOR DECIPHERING SPECTRA OF DIFFRACTION GRATING SPECTROGRAPHS. Yu. I. Belyaev and G. V. Mikhailova (Vernadskii Inst. of Geochemistry and Analytical Chemistry). Doklady Akad. Nauk S.S.S.R. 114, 38-9(1957) Sept. 1. (In Russian)

Chromatic spectra photographs of iron taken on a Baird Associates three-meter diffraction spectrograph with 15,000 lines per inch and 5.2 A/mm dispersion are discussed. Photographic diagrams are given. (R.V.J.)

(1)



Belyayev, Yu. I.

V 2711. The determination of small quantities of chromium in soils and plants by spectral analysis. Yu. I. Belyayev and L. L. Pavlenko. *Trudy Biogeokhim. Lab. Inst. Geokhim. i Analyt. Khim. Akad. Nauk SSSR*, 1954, (10), 50–63; *Ref. Zhur., Khim.*, 1955, (17), Abstr. No. 57,525.—In the determination of Cr in soils, quartz spectrograph Qu-24 was used, with a three-lens condenser in a d.c. arc. The electrodes were spectrally pure carbon, the sample cavity was 4 mm, and the width of the spectrograph slit was 0·015 mm. The sample of soil (20 mg) is ignited for 3·5 min. at 8 amp. The spectra of sample and standards are photographed on one plate (spectral plates, type II). The calibration curve is a straight line within the limits 0·035 to 0·085 per cent. of Cr; the analytical line is Cr 3677·189 A; the error of the analysis is ± 10 per cent. In the analysis of plants, the sample (20 to 30 g) is dried at 150° C, ashed, and ignited at c. 500° C. The sample is ignited in the cavity in the angular electrode for 2·5 min. with an 8-amp. d.c. arc. The analytical line is Cr 4254·34 A. The error is ± 15 per cent.

C. D. Kopkin

BELYAYEV, Yu.I.

Monochromatic interference light filter. Soob.GAISH no.80:18-29 '51.
(MLRA 7:5)

(Light filters)

(GAISH) Main Astron. Inst. im P.K. Shternberg, Moscow State Univ. im M.V. Lomonosov

L 12109-66

ACC NR: AT5026378

of converting the signals from photoelectric receivers by means of radiotechnical methods, which make it possible to separate the vanishing weak signals against a background of strong interferences; 2) possibilities of using electronic computers at the output of analytic devices with the aim of bringing out weak signals by means of mathematical statistics; and 3) possibilities of obtaining a large amount of different information on the line and the background. Resources in raising the accuracy of the methods discussed are mostly confined not in the field of recording the signals, but in a further improvement of the other links in the analytic process. It is concluded that future developments may expect to see a further increase in the transmission capabilities of photoelectric multichannel spectral devices intended for quantitative analysis. Orig. art. has: 3 figures and 4 tables.

SUB CODE: 09, 20 / SUBM DATE: 05Jul65 / ORIG REF: 021 / OTH REF: 011

Card 2/2

L 12109-66 EWT(1)/EWT(m)/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/GS/AT

ACC NR: AT5026378 SOURCE CODE: UR/0000/65/000/000/0020/0032

AUTHOR: Belyayev, Yu. I.; Ivantsov, L. M.

ORG: None

TITLE: Modern techniques of further improvement in the sensitivity, accuracy, and productivity of photoelectric methods of spectral analysis

SOURCE: AN SSSR. Institut geokhimiii i analiticheskoy khimii. Sovremennyye metody analiza; metody issledovaniya khimicheskogo sostava i stroyeniya veshchestv (Modern methods of analysis; methods of investigating the chemical composition and structure of substances), 20-32

TOPIC TAGS: photoelectric method, spectral line, optic analysis, electronic computer, computer application, SIGNAL TRANSMISSION, PHOTOELECTRIC DETECTION EQUIPMENT

ABSTRACT: A review is presented of modern techniques in raising the sensitivity, accuracy, and productivity of photoelectric methods of spectral analysis and the results achieved by these methods. A brief review is also given of the advantages of apparatus with electronic computer devices at the output. It is noted that work on revealing resources in raising the sensitivity of photoelectric methods of spectral analysis has only begun. These resources depend on 1) possibilities

Card 1/2

BELYAYEV, Yu.I.; IVANTSOV, L.M.; KOSTIN, B.I.

Recording spectra by electrophotographic materials. Zav.lab. 29 no.2:179-178 '63. (MIRA 16:5)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo AN SSSR.

(Spectrophotometry)

BELYAYEV, Yu.I.; KHITROV, L.M.

Use of quantometers for the analysis of geological materials.
Zhur. anal. khim. 18 no.3:310-317 Mr'63. (MIRA 17:5)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo, AN SSSR, Moskva.

GERASIMOVSKIY, V.I.; BELYAYEV, Yu.I.

Chromium, nickel, vanadium, and copper contents in alkali rocks of the Kola Peninsula. Geokhimiia no.1:23-34 Ja '63. (MIRA 16:9)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Kola Peninsula--Rocks, Igneous--Analysis) (Kola Peninsula--Metals)

BELYAYEV, Yu.I.

Evaluation of the diagnostic significance of epileptic seizures in brain tumors. Zhur. nevr. i psikh. 61 no.4:528-533 '61.
(MIRA 14:7)

1. Sverdlovskaya klinika bolezney i neyrokhirurgii (rukovoditel' - prof. D.G.Shefer).
(BRAIN--TUMORS) (EPILEPSY)

SHEFER, D.G., prof.; BELYAYEV, Yu.I. (Sverdlovsk)

Epileptic seizures and histological structure of brain tumors.
Vop.neirokhir. no.4:43-46 '61. (MIRA 14:12)

1. Klinika nervnykh bolezney i neyrokhirurgii Sverdlovskogo meditsinskogo instituta.
(BRAIN--TUMORS) (EPILEPSY)

BELYAYEV, Yu. I.

Cand Med Sci - (diss) "Epileptic seizures in the clinical aspect of brain tumors." Sverdlovsk, 1961. 23 pp;(Kuybyshev State Med Inst); 200 copies; price not given; (KL, 10-61 sup, 224)

BELYAYEV, Yu.I. (Sverdlovsk)

Dynamics of epileptic seizures in cases of cerebral tumors. Vop. neirokhir. 23 no.6:27-30 N-D '59. (MIRA 13:4)

1. Klinika nervnykh bolezney i neyrokhirurgii.
(BRAIN neoplasms)
(EPILEPSY etiology)

BARSUKOV, F.I., inzh.-mayor, kand.tekhn.nauk; BELYAYEV, Yu.I., inzh.-mayor

Books on television ("Electric transmission of pictures" by A.V.Tarantsov. Reviewed by F.I.Barsukov, IU.I.Beliaev). Vest.Vozd.Fl. no.6:87-89 Je '60. (MIRA 13:7)
(Television) (Tarantsov, A.V.)

BELYAYEV, Yu.D.; SHESTOPEROVA, Z.A.; ZYUKOVA, K.I.; YEVDOKIMOVA, M.G.

Use of prednisone in the compound treatment of pneumonia in children during the first year of life. Sov.med. 26 no.2: 138-140 F'63. (MIRA 16:6)

1. Iz Gor'kovskoy detskoy bol'nitsy No.25 (glavnyy vrach Ye.M. Smol'yaninova)

(PNEUMONIA) (INFANTS--DISEASES)
(PREGNADIENETRIONE)

BELYAYEV, Yu.D.

Experience in raising the qualifications of pediatricians under the conditions of a consolidated children's hospital. Zdrav. Ros.Feder. 6 no.12:22-23 D '62. (MIRA 16:1)

1. Ob"yedinennaya detskaya bol'nitsa No.25 goroda Gor'kogo (glavnyy vrach Ye.M.Smol'yaninova).
(GORKIY--PEDIATRICIANS)

BELYAYEV, Yu.D.

Eosinopenic reaction (Thorn's test) and the excretion of 17-ketosteroids in attacks of bronchial asthma in children. Pediatriia 41 no.9:54-56 S '62. (MIRA 15:12)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo pediatricheskogo instituta (dir. N.P.Zhukova) Ministerstva zdravookhraneniya RSFSR.

(ASTHMA) (STEROIDS) (ADRENAL CORTEX) (EOSINOPHILES)

BELYAYEV, Yu.D.; TYURINA, V.S.

Diphenylamine reaction in bronchial asthma in children. Vop. okh. mat. i det. 6 no.7:31-33 Jl '61. (MIRA 14:8)

1. Iz kafedry propedevtiki detskikh bolezney (zav. - prof. N.I.Kozin) Gor'kovskogo meditsinskogo instituta i Gor'kovskogo nauchno-issledovatel'skogo pediatricheskogo instituta (dir. N.P.Zhukova) Ministerstva zdravookhraneniya RSFSR.
(ASTHMA)

BELYAYEV, Yu.D., klinicheskiy ordinator

Functional state of the adrenal cortex in bronchial asthma in children. Uch. Zap. GMI no.8:96-99 '59. (MIRA 14:9)

1. Iz kafedry propedevtiki detskikh bolezney (zav. kafedroy - doktor med. nauk N.I.Kozin).
(ADRENAL CORTEX) (ASTHMA) (CHILDREN--DISEASES)

BELYAYEV, Yu.B.

Abnormalities as an indication of the state of the muskrat population. Izv.Sib.otd.AN SSSR no.4:125-132 '59.
(MIRA 12:10)

1. Altayskiy meditsinskiy institut.
(Muskrats)

BELYAYEV, Yu.B.

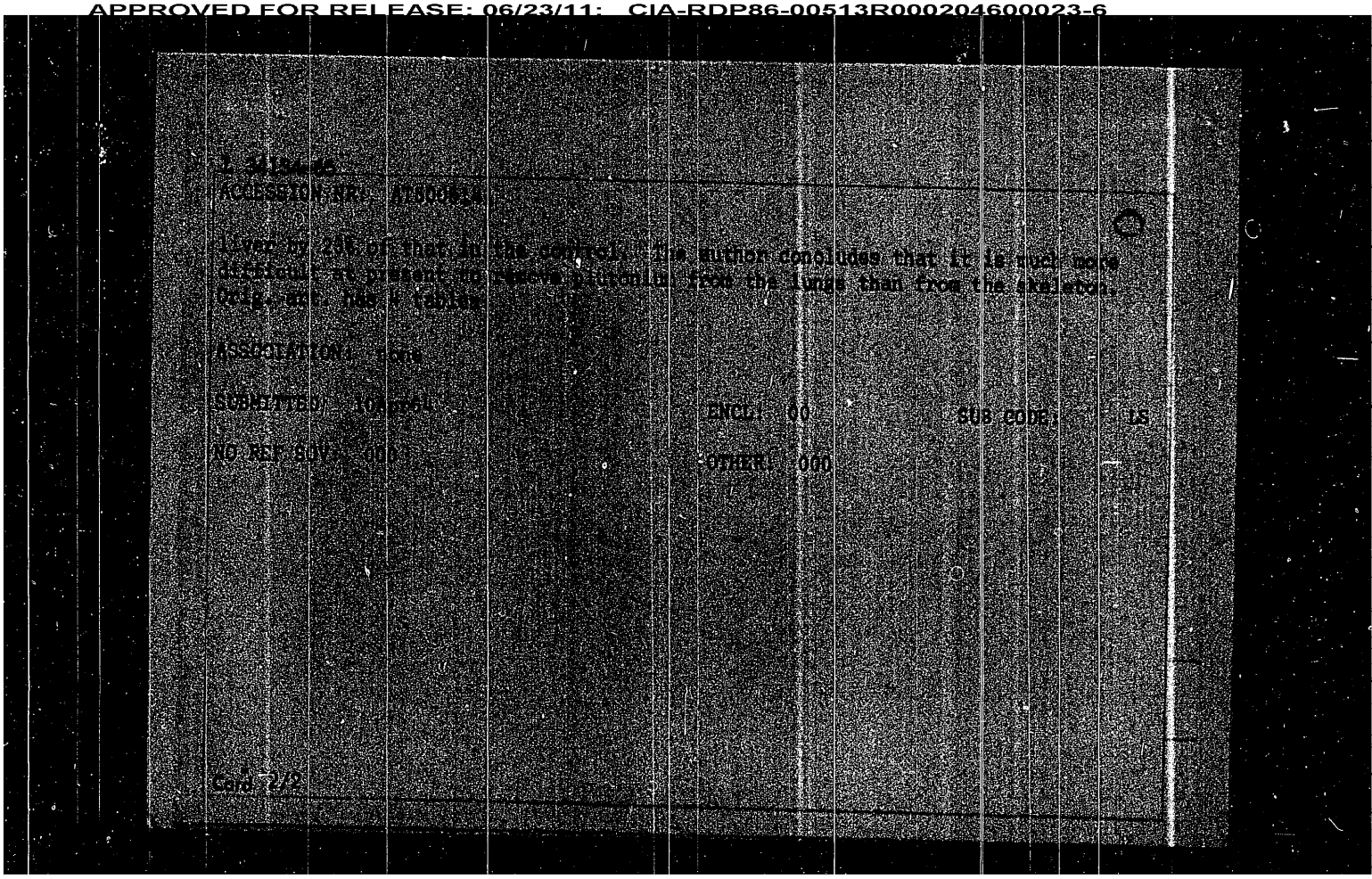
GRIGOROV, N.D., kand. ekon. nauk; DEMIDOVA, L.A., kand. ekon. nauk; LEGKOSTUP, I.M., kand. ekon. nauk; MAKEYEV, T.M., kand. ekon. nauk; TERESHINA, N.Ya., kand. ekon. nauk; LIZINA, A.I., kand. ist. nauk; BURDAKOVA, A.P.; BELYAYEV, Yu.B., prepodavatel' vysshikh uchebnykh zavedeniy; LYUBIN, V.A., prepodavatel' vysshikh uchebnykh zavedeniy; IVANOV, N.A., lektor; KUZ'MICHEV, V.S., lektor; SUBBOTIN, P.M., lektor; RAPPOPORT, G., red.; GRIN', Ye., tekhn. red.

[Development of the economy and culture of the Altai Territory during 40 years of the Soviet regime] Razvitie ekonomiki i kul'tury Altaiskogo kraia za 40 let sovetskoi vlasti. Barnaul, Altaiskoe knizhnoe izd-vo, 1957. 229 p. (MIRA 11:5)

1. Zaveduyushchiy krayzdravotdelom Altayskogo kraya (for Burdakova). 2. Altayskiy kraykom Kommunisticheskoy partii Sovetskogo Soyuza (for Ivanov, Kur'michev, Subbotin).
(Altai Territory--History)

BELYAYEV, Yu.A.

Pattern of cerium fixation by protein. Biokhimiia 28 no.4: 635-638 Jl-Ag '63. (MIRA 16:9)



L 44194-66
ACCESSION NR: AT5008[illegible]

Liver by 25% of that in the control. The author concludes that it is equal more difficult at present to remove pyrimidin from the lungs than from the skeleton. Orig. art. has 4 tables.

ASSOCIATION: none

SUBMITTED: 10Apr65 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

[illegible]

ACCESSION NR: AT500616 S/0000/64/000/000/0341/0347

AUTHOR: Belyayev, Yu. A.; Lemberg, V. K.

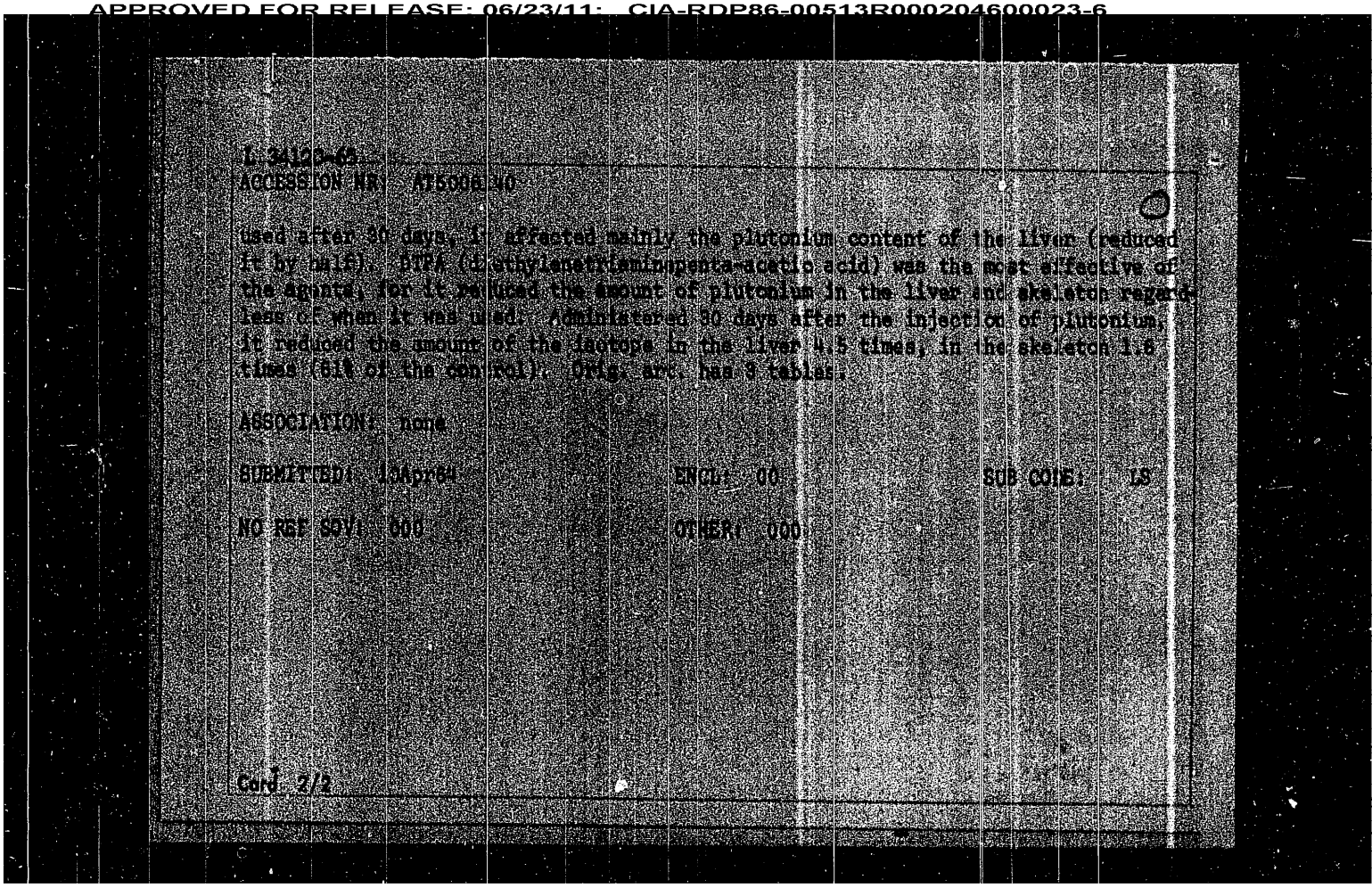
TITLE: Effectiveness of diethylenetriaminepenta-acetic acid (DTPA) after intratracheal administration of plutonium to rats

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 341-347

TOPIC TAGS: plutonium-239, radioisotope, radioactivity, liver, lung, complexing agent, therapy

ABSTRACT: Following the intratracheal administration of Pu^{239} in the nitrate form or carbonate complex, DTPA proved to be effective in removing the isotope from the lungs even when applied soon afterwards. Intraperitoneal injection of DTPA was somewhat more effective than intratracheal. Eighty per cent of the ammonium plutonium pentacarbonate injected intravenously was retained in the liver. The average amount of Pu^{239} excreted with urine was 0.1%, with feces, 12% (from the 1st to 7th days). A single intraperitoneal injection of DTPA (24 hours after intravenous injection of the carbonate complex of plutonium) reduced the amount of Pu^{239} in the

Card 1/2



L 34123-65
ACCESSION NR: AT5006140

used after 30 days, it affected mainly the plutonium content of the liver (reduced it by 44%). DTPA (diethylenetriaminopenta-acetic acid) was the most effective of the agents, for it reduced the amount of plutonium in the liver and skeleton regardless of when it was used. Administered 90 days after the injection of plutonium, it reduced the amount of the isotope in the liver 4.5 times, in the skeleton 1.6 times (61% of the control). Orig. art. has 3 tables.

ASSOCIATION: none

SUBMITTED: 13Apr64 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

L 34120-65 EWG(j)/EWT(m) GS

ACCESSION NR: AT5006940 S/0000/64/000/000/0338/0342

AUTHOR: Belyayev, Yu. A.

TITLE: Oral administration of some complexing agents to remove plutonium from rats

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 338-342

TOPIC TAGS: plutonium-239, radioisotope, radioactivity, bone, complexing agent, liver, therapy

ABSTRACT: Experiments were performed on male rats given 0.66 to 1.01 μc/ of Pu^{239} intraperitoneally. The complexing agents were administered orally through a stomach sound at various intervals after the injection of plutonium. EDTA (ethylenediaminetetra-acetic acid) and DCTA (1,2-diaminecyclohexanetetra-acetic acid) proved to be wholly ineffective in removing plutonium from the skeleton or liver. EDPA (ethylenediaminebis-acetic-bimethylphosphinic acid) was effective only when used 2 or 6 hours after the injection of plutonium. The repeated use of EEDTA (ethylester-diaminetetra-acetic acid) within 24 hours reduced the amount of plutonium both in the liver (1.6-fold) and in the skeleton (65% of the control). But when

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ACCESSION NR: AT3008538

automatic control by means of a digital electronic control device (ETsUM). This device has been described by Yu. A. Belyayev (1961, Izv. GAO AN SSSR, 169). It operates with a binary code of sidereal time, computed in angular scale from the panel. This involves the use of a quartz-crystal clock running on sidereal time, a frequency divider and power amplifier, a frequency converter, and a cumulative adder. The operation of the parts is described in considerable detail. "B. N. Batanov (deceased), Yu. N. Gell', and A. V. Korolev participated in this work." Orig. art. has: 7 figures.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya AN SSSR (Main Astronomical Observatory AN SSSR)

SUBMITTED: 00 DATE ACQ: 16Oct63 ENCL: 00

SUB CODE: AA, IE NO REF SOV: 004 OTHER: 000

Card 2/2

ACCESSION NR: AT3008538 S/2984/63/000/000/0023/0027

AUTHORS: Belyayev, Yu. A.; Gerasimova, T. S.; Dravskikh, Z. V.; Mikhel'son, N. N.; Sumin, V. S.; Shkutova, N. A.; Shumakher, A. V.

TITLE: Control system for the RM-700 telescope

SOURCE: Novaya tekhnika v astronomii; materialy* soveshch. Komissii priborostroyen. pri Astronom. sovete AN SSSR, Moskva, 18-20 apr. 1961 g. Moscow, Izd-vo AN SSSR, 1963, 23-27

TOPIC TAGS: control system, automatic control, RM 700 telescope, telescope, ETsUM digital control machine

ABSTRACT: A 700-mm reflector telescope (called the RM-700) has just been built at the Pulkovskaya observatoriya (Pulkovo Observatory). It will be equipped with a double control system. One aspect is a semiautomatic control from a key or with one of two panels operating by semiautomatic control. The position of the telescope will be computed on this panel, each coordinate having a double-metering selsyn connection operating as an indicator. The hour mechanism will be a synchronous motor, supplied by a quarts-crystal clock. The second part of the system is

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On a Method of Using ....

were fed with 100 V, 10 kc/s, square-topped pulses of 7 ms duration. The triggering loops were excited by pulses with an amplitude of 10 V; the pulses on the output windings W_2 showed a scatter of 10 - 30 V. In the order in which the windings were discussed above, the number of turns was chosen to lie in the ranges: 35-100, 5-71, 36-80 and 35-100. The experimental model made a binary recording of 33 values of a continuous current varying between 0 and 1 A. The model showed that the method could be made to work successfully.
There are 3 figures.

ASSOCIATION: Kafedra prikladnoy mekhaniki Moskovskogo gosudarstvennogo universiteta (Department of Applied Mechanics of Moscow State University)

SUBMITTED: August 20, 1960

On a Method of Using ....

winding W_3, whilst the winding W_4 was connected to a DC cource and was wound so as to generate a magnetic field in the direction opposite to that of the winding W_3. Square-topped pulses were fed into the winding W_1. When this current reaches a value leading to an equality between the ampere turns in winding carrying the current and that connected to the constant voltage, pulses are generated in the fourth winding. These pulses are recorded in decimal form and later converted to binary. Diodes are included in the circuitry to prevent the appearance of spurious pulses. Because of variations in the cores stabilisation of the amplitudes of the pulses is necessary and this is achieved by including resistances in the discharge busbars. Two circuit arrangements - one for parallel output and the other for series output - are illustrated and described. There is a discussion of the properties of cores giving reasons why cores of type K-222 were chosen. An experimental model with 22 cores was built, the parallel output form being adopted. The windings W_1

22642

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E031/E335

9.7300

AUTHOR: Belyayev, Yu.A., Engineer

TITLE: On a Method of Using Ferrite Cores for Analog-digital conversion

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1960, No. 12, pp. 26 - 31

TEXT: Analog-digital and digital-analog conversions are becoming increasingly necessary as analog and digital computers are used together in automatic-control systems. The quantity to be digitised is an electric current which varies between 0 and 1 A with a frequency of 1 c.p.s. The interval of the changes was sub-divided into individual values, spaced at equal time intervals. Each of the current values was individually digitised, using a toroidal ferrite core which carried four windings, W_1, W_2, W_3 and W_4, with a suitable number of ampere turns. The winding W_1 was the input winding for the triggering pulses; W_2 supplied the output pulses. The slowly-changing current to be digitised was fed into the

Card 1/3

LEBEDEV, B.F.; PASHCHIN, A.N.; IVANOV, A.D.; BELYAYEV, Yu.A.

Industrial method of making an apparatus for calcining alunite. Avtom.svar. 18 no.1:66-68 Ja '65. (MIRA 18:3)

1. Institut elektrosvarki im. Ye.O.Patona AN UkrSSR (for Lebedev, Pashchin, Ivanov). 2. Stroitel'no-montazhnyy trest Gosudarstvennogo proizvodstvennogo komiteta po montazhnym i spetsial'nym [illegible] (for Belyayev).

VOLOSHENKO-KLIMOVITSKIY, Yu.Ya.; BELYAYEV, Yu.A.; [illegible] V.V., B.S.; [illegible]NENKOVSKAYA, V.I.

Strength of cold cured PN-1 bonded glass plastics under the conditions of impact tension at normal (+20°C) and low (-[illegible]°C) temperatures. Plast.massy no.6:39-40 '64.

(MIRA 18:4)

BELYAYEV, Yu.A.

Comparative effectiveness of some complexons in removing plutonium-239 from the animal organism. Radiobiologiia 4 no.5:760-763 '64.
(MIRA 18:4)

BILETSKIY, S.M.; PASHCHIN, A.N.; GALSTYAN, N.O.; BELYAYEV, Yu.A.

Making an apparatus for the reduction of alunite. Avtom. svar. 17 no.9:71-74 S '64. (MIRA 17:10)

1. Institut elektrosvarki im. Ye.O. Patona AN UkrSSR (for Biletskiy, Pashchin). 2. Trest "Stroymontazh" (for Galstyan, Belyayev).

ACCESSION NR: AP4039947

ENCLOSURE: 01

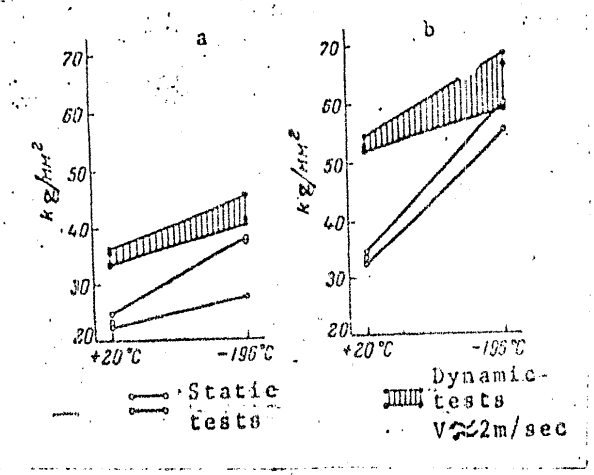

Fig. 1. Results of static and dynamic tensile tests of PN-1-based glass-reinforced plastics at +20 and -196 C

a - Along the woof; b - along the warp.

Cord 3/3

ACCESSION NR: AP4039947

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 24Jun64	ENCL: 01
SUB CODE: MT	NO REF SOV: 002	OTHER: 000

Card 2/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204600023-6

ACCESSION NR: AP4039947 S/0191/64/000/006/0039/0040

AUTHOR: Voloshenko-Klimovitskiy, Yu. Ya.; Belyayev, Yu. A.; L'vov, B. S.; Shpakovskaya, Ye. I.

TITLE: Impact tensile strength at +20 and -196 C of glass reinforced plastics based on PN-1 binder cured at low temperatures

SOURCE: Plasticheskiye massy*, no. 6, 1964, 39-40

TOPIC TAGS: glass reinforced plastic, glass fabric T-1, polyester resin PN-1, impact tensile test, static tensile test

ABSTRACT: The authors have developed at the Laboratory of the Strength of Materials for Machine Building of the IMASh GKA i M a method for impact tensile tests of glass reinforced plastics (GRP). This method makes it possible to determine the tensile strength in uniaxial stretching and can be used for calculating mechanical strength. It was applied to T-1 glass fabric-reinforced unsaturated polyesters resin PN-1. The GRP were subjected to static and impact tests. The results, which are given in Fig. 1 of the enclosure, show that PN-1-based GRP possess a good "dynamic strength reserve" both at +20 and -196 C. Orig. art. has 1 figure and 1 table.

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L 12969-63
ACCESSION NR: AP3000405

2

ever, when cold and stress were applied simultaneously, as compared with their separate application; in some cases, in fact, strength was reduced when low temperature and stress were brought to bear simultaneously. "The authors thank Ye. I. Stepanyuchev and Ye. F. Vasil'yev for their assistance in procuring the samples of glass-fiber compositions used in the studies." Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 10Jun63 ENCL: 00

SUB CODE: MA NO REF SOV: 004 OTHER: 000

Card 2/2

L 12969-63 EPA/EWP(j)/EPF(c)/EWT(m)/BDS AFFTC/ASD Pb-4/Pc-4/Pr-4
RM/GW

ACCESSION NR: AP3000403 S/0191/63/000/005/0053/0056

AUTHOR: Voloshenko-Klimovitskiy, Yu. Ya.; Belyayev, Yu. A.; Korenkov, Yu. A.

TITLE: Investigation of the impact stretch of glass-fiber compositions at normal and low temperatures

SOURCE: Plasticheskiye massy*, no. 5, 1963, 53-56

TOPIC TAGS: impact tension, glass-fiber compositions, phenol-formaldehyde resins

ABSTRACT: Methods for assessing the dynamic properties of viscous fiber-glass compositions leave much to be desired; only their impact strength has been determined. The authors have devised a method for testing the impact tension of these materials at normal (+20C) and low (-196C) temperatures, using equipment at the Laboratoriya prochnosti mashinostroitel'nykh materialov (Machine-building Materials Strength Laboratory) of IMASh GNA i M. Used for the tests were two experimental formulations of AG-4S (phenol formaldehyde resin with a filler of oriented glass fibers, equistable and unidirectional, respectively). Because of the low plasticity of these materials, only the stress impulse need be recorded. Hence the apparatus required is less complicated than in the case of metals. A single-beam impulse oscillograph (10-4) gave satisfactory results. Low temperature increased the strength of the AG-4S formulations, even during impact stress. The increase was negligible, how-

Card 1/2

BELYAYEV, Yu.A., inzh.

Progressive methods of assembling electrolyzers in the aluminum industry. Mont.i spets.rab.v stroi. 24 no.11:6-9 N '62.
(MIRA 15:12)

1. Vsesoyuznyy montazhnyy trest Glavshakhtostroya Ministerstva tsvetnoy metallurgii SSSR.
(Volgograd--Aluminum plants)

S/742/62/000/000/021/021
I015/I215

The effect of chelating agents...

turned out to be practically non-efficient in removing Pu from the bones. In the liver it brought about a slight decrease in Pu contents (about one half), thus resembling the effect of EDTA. There are 5 tables.

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S/742/62/000/000/021/021
I015/I215

The effect of chelating agents...

di-N-carboxymethylethylenediamine-bis-methylphosphoric acid (EDPA). These agents were administered i.p. and i.v. (100 μ moles for repeated injections and 240 μ moles as a single dose). The chelating agents were administered either simultaneously with Pu or 2,6,24 hours and 30 days after the injection of Pu. In order to determine the Pu activity in the body excreta a series of experiments in metabolic cages were also carried out. It was found that $CaNa_2EEDTA$ and $CaNa_3DTPA$ were efficient as Pu removing agents also at remote periods after the injection of the radioisotope. The former was more efficient than the latter, especially in acute experiments, but repeated administrations abolished these differences. The calcium-diammonium salt of EDPA was efficient only in acute experiments and lost much of its efficiency if administered 24 hours after the injection of Pu. DCTA

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44079

S/742/62/000/000/021/021
I015/I215

271220

AUTHOR: Belyayev, Yu.A.

TITLE: The effect of chelating agents on the removal of plutonium from rats

SOURCE: Plutoniy-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz, 1962, 156-161

TEXT: Efficient methods for the removal of radioisotopes from tissues have not yet been found until now. Experiments were carried out on female rats weighing 180-200 g. Pu citrate (4.4 μc/kg b.w.) was administered i.p. and i.v. The following chelating agents were tested: 1,2-diaminecyclohexanetetraacetic acid (DCTA), ethyletherdiaminetetraacetic acid (EEDTA), diethylenetriaminepentaacetic acid (DTPA),

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I015/I215

The effect of ion-exchange resins...

270 μCu/kg b.w.). The animals received per os 0.2 g of an ion exchange resins 5-10 min. and one hour after the administration of Pu. The cationite employed was KY-2 (KU-2) and the anionites were EDE-10 (EDE-10) and AH-2Φ (AN-2f) previously treated with either hydrochloric or nitric acid. The chelating agent (100 mg/kg b.w.) was administered i.v. ½,1,2 and 4 hours after the introduction of Pu. The animals were sacrificed after 72 hours and Pu was determined in both the bones and liver. The ion exchange resins brought about a decrease in the absorption of Pu by the intestines and, consequently, the level of Pu in the bones and liver was markedly lower in animals which received either anionites or cationites. There was a direct dependence between the efficiency of the ion exchangers and the rate of intestinal absorption of Pu. The calcium-trisodium salt of DTPA turned out to be an efficient agent in removing the Pu absorbed via the G-I tract, if administered i.v. There are 1 figure and 2 tables.

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44078

S/742/62/000/000/020/021
I015/I215

27 1229

AUTHOR: Belyayev, Yu.A.

TITLE: The effect of ion-exchange resins and chelating agents on the distribution of plutonium introduced per os

SOURCE: Plutoniy-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu. I. Moskalev. Moscow, Medgiz, 1962, 151-155

TEXT: This is a first report on the effect of i.v. administration of a chelating agent (diethylenetriaminepentacetic acid-DTPA) on the plutonium distribution. Experiments were carried out on female rats weighing 200-220 g. Plutonium nitrate (pH = 2) and the citric acid complex (the final concentration of sodium citrate = 3%, the pH = 6.5) were introduced by a gastric tube into the stomach (120-

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S/742/62/000/000/007/021
I015/I215

Chemical forms of plutonium...

method of Schneider and by that of Davidson. Globulins, albumins and residual proteins were separated from the liver by the method of Lak too. The nuclei were separated from the cytoplasm by repeated extractions with physiologic solution at pH = 6.0-6.2. The amount of plutonium was determined by the author's method. It was found that plutonium in the liver was mainly bound to proteins. About 50% of Pu in the liver was bound to cytoplasmic globulins. The distribution in the nuclei was as follows: 17-24% was bound to DNA, 12-16% to acid proteins and 1.5-4.0% to residual proteins. The Pu contents of the liver proteins was the same during 2 months after the injection; thus the chemical form of the injected Pu did not affect this phenomenon. In the spleen there was a lower concentration of Pu in the DNA fraction (5-8%) than in the liver. The Pu complex with DNA was more stable than that with RNA, probably due to the high polymerization of the former. There are 5 tables.

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44065

S/742/62/000/000/007/021
I015/I215

271220

AUTHOR: Belyayev, Yu.A.

TITLE: Chemical forms of plutonium (Pu^{239}) in the liver and spleen of rats

SOURCE: Plutoniy-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz, 1962, 45-51

TEXT: The physico-chemical state of Pu in the blood has been studied previously. Experiments were carried out on the liver and spleen of rats which were injected i.p. with either plutonium nitrate (pH = 2.0) or the citric acid complex (pH = 6.5). The dose of plutonium was 3.6-4.9 μg/kg b.w. Acid soluble fractions, lipids, nucleic acids and proteins were separated from the organ homogenates by the

Card 1/2

S/742/62/000/000/003/021
I015/I215

The toxicologic characteristics...

their organs were examined for the presence of plutonium. The results of the histologic examination are reported by A.P. Nifatov in a separate article. The blood picture was studied in 10 animals of each group on the 1st, 2nd and 3rd week and 1st, 2nd, 3rd and 6th month after injection. The determination of plutonium in the organs was carried out by Yu.A. Belyayev's method. It was found that the distribution of $NaPuO_2(CH_3COO)_3$ in the various organs was very much the same as that of other plutonium compounds. The deposits in the bones of the plutonium compound studied accounted for 50-60% of the injected dose, but decreased gradually down to 27% 18 months after the injection. The distribution of Pu in organism was independent of the dose. The doses of 3.3 and 1.6 μCu/kg b.w. were the most carcinogenic, whereas the latter dose did not affect the average life-span of the rats. There are 3 tables.

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44061

S/742/62/000/00/003/021
I015/I215

27.3520
27.1220

AUTHORS: Belyayev, Yu.A., Yelkina, N.I., Konstantinova, V.V., and Tseveleva, I.A.

TITLE: The toxicologic characteristics of sodium-plutonyl-triacetate and its distribution in rats

SOURCE: Plutoniy-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz, 1962, 19-22

TEXT: This plutonium salt has been studied little. Experiments were carried out on 260 rats and 49 control animals weighing 120-150 g. The doses of freshly prepared, i.p. injected plutonium salt (pH = 6.5) were 21,11,6.3,3.3 and 1.6 μCu/kg b.w. Three animals from each dose group were sacrificed at various time-intervals after injection and

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I015/I215

Distribution of plutonium...

up to 70% occurred very slowly - 43% of the plutonium was still present after 6 months, and 21.7% after one year. The initial concentration in the bones was 20-30%, but reached a value of 43% after 6 months. The plutonium concentrated in the spongy more than in compact bones, and settled in the marrow when administered in the form of $Pu(NO_3)_4$. There are 1 figure and 3 tables.

Card 2/2

44059

S/742/62/000/000/001/021
I015/I215

27 1220

AUTHORS: Belyayev, Yu.A., Konstantinova, V.V., and Yelkina, N.I.

TITLE: Distribution of plutonium in rabbits

SOURCE: Plutoniy-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz, 1962, 7-11

TEXT: Most of the earlier studies on the distribution and excretion of plutonium were carried out on small laboratory animals. Present experiments were carried out on rabbits, male and female, weighing 2.5-3.0 kg. Plutonium nitrate (pH=2) was injected i.v. at doses of 2-7 μCu/kg, and the animals were sacrificed 1, 7, 14 days, and 1,3,4,5,6,9, 12 months after injection. Yu.A. Belyayev's method was used in order to determine the amount of plutonium in the bones, liver, kidneys, spleen, lungs, muscles, bone marrow and gastro-intestinal tract. The excretion from the liver where it was concentrated

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the use of EEDTA. This differing efficacy was preserved at other stages of the investigation. In the acute stage of the experiment EDFA was intermediate between DTPA and EEDTA, but diminished greatly in efficacy at later stages. The number and rhythm of the injections had a substantial influence on the end effect of the treatment. Eight injections of DTPA had less effect than 12. One injection a day had as much effect as two, etc. There are 1 figure, 5 tables and 9 references: 2 Soviet-bloc and 7 non-Soviet-bloc. The references to the English-language publications read as follows: H. Forman, W. Moss and B. Eustler, Amer. J. Roentgenol., 79, 6, 1071 (1958); A. Catsch and D.Kh. Lê, Nature, 180, 609 (1957); V.H. Smith, Nature, 181, 4626, 1792 (1958).

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tonium content of the blood with time and with its resorption from the gastrointestinal tract. Single intravenous injection of 100 mg/kg of diethylene triaminopentaacetic acid into rats 30 min, and 1, 2 and 4 hours after the administration of plutonium decreased the plutonium content in the skeleton by 5 times and in the liver by 8-11 times in the first 3 days; subsequently the effect was somewhat diminished. The treatment was therefore effective at a time when the use of ion-exchaning resin had no effect. The method could also be used against contamination of the skin and lungs with plutonium and its subsequent resorption into the blood. The author also studied the efficacy of the commonly used ЭЭДТА(EEDTA) and ДТПА (DTPA) complexones and another ЭДТА(EDTA) derivative, dinitrocarboxymethylethylene diamino-bis-methylphosphate acid, or ЭДФА(EDFA), for removing deposited plutonium from rats. EEDTA was used as $CaNa_2$EEDTA, DTPA as $CaNa_3$DTPA, and EDFA as $Ca(NH_4)_2$EDFA. The dose ranged from 100 to 240 mcM per rat. It was found that with intravenous injection of DTPA the plutonium content in the skeleton was approximately 9 times less, and in the liver 2 times less, than with

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citrate. The dose ranged from 0.12 to 0.27 μc/kg of the animal's weight. An aqueous suspension of ion-exchanging resins was then administered in a dose of 0.2 g per rat 5-10 min in series I-V and one hour in series VI and VII after contamination with plutonium. Both anionites (ЭДЭ-10 (EDE-10), АН-2Ф (AN-2F)) and cationites (КУ-2 (KU-2)) were used as ion-exchangers. The results of their efficacy are tabulated. With the introduction of EDE-10 one hour after contamination the plutonium content in the skeleton and liver was only 60% of the control animals', while no effect was noted for KU-2. This was due to the rate of plutonium resorption from the gastrointestinal tract. After 2 hours, resorption reaches its maximum and all the plutonium capable of metabolism and resorption disappears from the ionites' sphere of action. After 2 hours about 80% of the resorbed plutonium is distributed in the blood. This led the author to try out intravenous injection of complexone in the hope that it would reduce further resorption of plutonium from the blood into the organs and would therefore reduce the plutonium content in these organs. A study was made of the charge in the plu-

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AUTHOR: Belyayev, Yu.A.

TITLE: Possible ways of affecting the excretion of plutonium from animals

SOURCE: Lebedinskiy, A.V. and Moskalev, Yu.I., eds. Biologicheskoye deystviye radiatsii i voprosy raspredeleniya radioaktivnykh izotopov; sbornik rabot. Moscow, Gosatomizdat, 1961, 182-189

TEXT: A study was made of the removal of plutonium from rats. The study covered: 1) the efficacy of various therapeutic measures against plutonium which has entered the gastrointestinal tract, and 2) the comparative efficacy of certain complexones in the event of the parenteral introduction of plutonium into rats in the early and remote stages after contamination. The rats were given a solution of plutonium salts containing: a) 4-valent plutonium nitrate and b) plutonium citrate complex with a 3% final concentration of sodium

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BELYAYEV, Yu.A.

Use of ion exchange resins in the removal of plutonium from the gastrointestinal tract. Med.rad. 5 no.3:44-47 '60.
(MIRA 13:12)

(ION EXCHANGE) (PLUTONIUM) (DIGESTIVE ORGANS)

HELYAYEV, Yu.A.

Effect of diaminocyclohexantetraacetic acid calcium disodium on plutonium metabolism in rats. Med.rad. 5 no.2:54 F '60.
(MIRA 13:12)

(PLUTONIUM METABOLISM) (EDATHAMIL CALCIUM DISODIUM)

BELYAYEV, Yu.A.

Physicochemical properties of plutonium (Pu^{239}) in the blood following intravenous administration. Med.rad. 4 no.9:45-51 S '59. (MIRA 12:11)

(PLUTONIUM blood)

GALSTYAN, N.O., inzh.; KOMISSAROV, S.G., inzh.; BELYAYEV, Yu.A., inzh.

Manufacture and assembly of precipitation tanks in construction of the Pavlodar aluminum plant. Mont. i spets. rab. v stroi. 23 no.12:5-9 D '61. (MIRA 15:2)

1. Trest Stroymontazh.
(Kazakhstan--Aluminum industry and trade)

An electronic digital computer for...

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stages 4, circuits UUTK-δ and UUGN-δ switch on the working-out for δ-axis. Calculation of data on t and δ is performed by the same device in EDC. The limbs on axes t and δ of the telescope are marked by the Grey code. Reading out is conducted by means of successively flashing neon tubes (from delayed pulses) and photomultipliers. The Grey code obtained is transformed into a conventional binary code in the code converter and is fed into a universal arithmetic device (where corrections for mean refraction by hour angle and declination are inserted); codes of time t and angle δ are also fed there for summing or subtraction. Quantities t_2 and δ_2 are fed from the output of the universal device into the subtracting circuit Δ where mismatching errors in t and δ are calculated. The control of servomechanisms is conducted in dependence on the magnitude and sign of errors. The speed of rough guidance is constant. It functions at an error larger or equal to $2^9.4''.94$. The working-out at an error lesser or equal to $(2^8 - 1) . 4''.94$ is conducted with a speed proportional to the magnitude of the error. The computer has been constructed mainly on electronic tubes (~300). There are 10 references.

L. Kotlyar

[Abstracter's note: Complete translation]

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frequency $f_{\text{п}} \approx 12{,}136$ per./stel. sec. controlling the operation of the generator of synchronizing pulses and the generator of single delayed pulses. The former generates series of 20 pulses following each other with a frequency of 2,300 cps, which determines the frequency of orders of binary numbers. Simultaneously, single delayed pulses, shifted relative to each other by the magnitude of one order of a binary number (at its successive representation) are obtained from 19 output bars of the generator of single delayer pulses. These pulses are employed to convert numbers from the parallel form into successive one and back, to form various numbers, to read out code limbs, as well as in the output devices of EDC. A pick-up of switching pulses controls the sequence of operations. It divides every cycle of computer operations into four stages: 1) Picking-up the code of hour angle from a limb mounted on the hour axis of the telescope and its conversion into binary code t_1. 2) Input, calculation and output of data on coordinate t. 3) Picking-up the code of declination angle from the limb of the declination axis and its conversion into binary code δ_1. 4) Input, calculation and output of data on coordinate δ. In pauses between two successive stages 2, the working-out of t-axis error is carried out by means of devices for fine correction control, УУТК -t (UUTK-t) and rough guidance, УУГН-t (UUGN-t); simultaneously in pauses between two successive

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mean refraction by hour angle Δr_t and declination Δr_δ. 7) Calculates the magnitude of mismatch by hour angle Δt and declination $\Delta\delta$. 8) Introduces corrections for errors Δt and $\Delta\delta_1$, in the telescope position. Corrections for flexure and dependence of refraction on temperature and pressure are not introduced. EDC operates in the binary system with 19-order numbers (19th order is the order of sign). Accuracy = 5" arc, frequency of repetition of calculation cycles ~3.034 per./stellar sec. (in observations of the Moon and planets the frequency varies within the limits - 2.5 + 5%, which is brought about by the mechanism controlling the speed. It is supplied from an audio oscillator, power amplifiers УМ, (UM_1) and UM_2 and a frequency divider ДЧ, (DCh_1) (the frequency supplied from the quartz clock of the time service = 1,000 per./stel. sec.). The carrier frequency ~400 cps, modulated by stable frequency of ~6.068 per./stel. sec., is obtained from the output of the speed controlling mechanism. In observations of planets the frequency can vary within the indicated limits by regulating the frequency of the audio oscillator. Even after conversion in the frequency divider DCh_2, starting pulses with sequence frequency $f \cong 3.034$ per./stel. sec. go out, which determine the repetition frequency of the computer operation cycles. Moreover, DCh_2 produces pulses with a

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AUTHOR: Belyayev, Yu. A.

TITLE: An electronic digital computer for controlling the PM-700 (RM-700) telescope

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 9, 1962, 76 - 77, abstract 9A542 ("Izv. Gl. astron. observ. v. Pulkove", 1961, v. 22, no. 4, 171 - 194, English summary).

TEXT: The author describes the design of an electronic digital computer (EDC) intended for controlling the equatorial 700-mm telescope. The EDC automatically aims the telescope at a celestial object and tracks it. The coordinates of the object are set up on the scales of the panel board, and EDC checks and corrects the movement of the telescope (pre-calculates necessary data for each instant of time). EDC operates by the parallelsuccessive principle and performs the following calculational operations: 1) It calculates stellar time S for every instant. 2) Receives right ascension α and declination δ of a star from the panel board. 3) Calculates the values of hour angle t of the star. 4) Determines the true value of the telescope hour angle t_1 (for the given instant). 5) Determines the true value of declination angle δ_1. 6) Calculates and takes into account corrections for

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BELYAYEV, Yuriy Aleksandrovich, inzh.

Use of toroidal ferromagnetic cores for the conversion of continous magnitudes to discrete magnitudes. Izv. vys. ucheb. zav.; elektromekh. 3 no.12:26-31 '60. (MIRA 14:5)

1. Kafedra prikladnoy mekhaniki Moskovskogo gosudarstvennogo universiteta.

(Cores (Electricity))
(Transducers)

BELYAYEV, Yu., kapitan

The group is ready for flight. Kryl.rod. 13 no.12:3-4 D '62.
(MIRA 16:2)
(Air pilots)

BELYAYEV, Yu.

"Socialist industrialization of the people's democracies."
Reviewed by IU.Beliaev. Vop. ekon. no.3:131-135 Mr '62.
(MIRA 15:3)

(Communist countries--Industries)

BELYAYEV, Yu.

Two-way recording on the "Dnepr-3" magnetic recorder. Radio no.5:46 My '54. (MLRA 7:5)

(Magnetic recorders and recording)

BELYAYEV, Yu.

Rise in the economy and culture of the Korean People's Democratic Republic ("Development of the national economy and culture of the Korean People's Democratic Republic, 1946-1957" [in Korean]. Reviewed by IU. Beliaev. Vop. ekon. no.4:125-129 Ap '59. (MIRA 12:7)

(Korea--Statistics)

BELYAYEV, Yu.

Creation of socialist industry in the Korean People's Democratic Republic. Vop. ekon. no.9:60-70 S '58. (MIRA 11:10)
(Korea--Industries)

BELYAYEV, Yu.; KHITROV, L.

Chemical analysis in a minute. Nauka i zhizn' 29 no.6:60 Je '62.
(MIRA 15:10)

1. Nauchnyye sotrudniki Instituta geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo AN SSSR.
(Spectrum analysis)

PORAY-KOSHITS, B.A.; BELYAYEV, Ye.Yu.; SHADOVSKIY, Ye.; ZAYONTS, V.I.

Reaction in which the nitroso group is cleaved off from aliphatic-aromatic nitrosamines. Dokl. AN SSSR 157 no.3: 629-631 Jl '64.
(MIRA 17:7)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

BELYAYEV, Ye. V., Cand Tech Sci -- (diss) "Effect of mining factors on underground steel mains under conditions of Donbass." Stalino, 1958. 16 pp (Committee for Supervision of Safe Performance Operations of Works in Industry and Mining Supervison under the Council of Ministers of USSR, All-Union Sci Res Mine-Surveying Inst VNIMI, Ukrainian Affiliate), 120 copies (KL, 16-58, 119)

BELYAYEV, Ye.V.

BELYAYEV, Ye.V., inzh.

Effect of mining operations on steel mains. [Trudy] VNIMI no.31: 67-88 '57. (MIRA 11:1)

(Mining engineering) (Water pipes)